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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/808,185 | 03/24/2004 | John C. Lallier | 34826-1017 | 4569 |
| 41881 | 7590 | 09/19/2006 | EXAMINER | |
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| | | | ART UNIT | PAPER NUMBER |
| | | | 2168 | |

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 08/02/2003 has been received, entered into the record, and considered. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-10, 19-43, and 52-66 are rejected under 35 U.S.C. 102(e) as being anticipated by **Prahlad et al.** (U.S. PGPUB 2006/0010154).

4. Regarding claim 1, **Prahlad** teaches a method comprising:

A) receiving from a host a data processing request specifying a data file (Prahlad, Paragraphs 17 and 48-49, Figure 3);

- B) examining a stub file stored on the target storage device that corresponds to the specified data file (Prahlad, Paragraphs 20-21, and 49, Figure 4);
- C) wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file (Prahlad, Paragraphs 14, 20-21, and 49, Figure 4); and
- D) copying the source data file from the source storage device to the target storage device (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4).

The examiner notes that **Prahlad** teaches “**receiving from a host a data processing request specifying a data file**” as “In some embodiments, when the NAS device receives an electronic data request from a network device” (Paragraph 17) and “to which the network device can be redirected if a read request for the file is received from the network device” (Paragraph 48). The examiner further notes that **Prahlad** teaches “**examining a stub file stored on the target storage device that corresponds to the specified data file**” as “opening the stub file stored in place of the data by the NAS device at a first location, the first location...reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49). The examiner further notes that **Prahlad** teaches “**wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device”

(Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49). The examiner further notes that **Prahlad** teaches "**copying the source data file from the source storage device to the target storage device**" as "De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location" (Paragraph 35) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49).

Regarding claim 2, **Prahlad** further teaches a method comprising:

- A) retrieving requested data from the copied data file (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4); and
- B) providing the requested data to the host (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4).

The examiner notes that **Prahlad** teaches "**retrieving requested data from the copied data file**" as "De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location" (Paragraph 35) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49). The examiner further notes that **Prahlad** teaches "**providing the requested data to the host**" as "De-migration as used herein generally refers to data

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retrieval-type operations and may...is otherwise restored to the first location”

(Paragraph 35) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49).

Regarding claim 3, **Prahlad** further teaches a method comprising:

A) wherein the source data file is stored in a file volume on the source storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the source data file is stored in a file volume on the source storage device**” as “storing the data to a second location” (Paragraph 20) and “the pointer pointing to the second location; and reading the data from the second location” (Paragraph 21).

Regarding claim 4, **Prahlad** further teaches a method comprising:

A) wherein the stub file is stored in a file volume on the target storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the stub file is stored in a file volume on the target storage device**” as “storing a stub file at the first location” (Paragraph 20) and “opening the stub file in place...to a second location by the network attached storage system” (Paragraph 21).

Regarding claim 5, **Prahlad** further teaches a method comprising:

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A) wherein the target storage device comprises a NAS filer (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a NAS filer**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 6, **Prahlad** further teaches a method comprising:

A) wherein the target storage device comprises a file server (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a file server**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 7, **Prahlad** further teaches a method comprising:

A) wherein the data processing request is received from the host via a network (Prahlad, Paragraphs 17 and 48, Figure 3).

The examiner notes that **Prahlad** teaches “**wherein the data processing request is received from the host via a network**” as “In some embodiments, when the NAS device receives an electronic data request from a network device” (Paragraph 17) and “to which the network device can be redirected if a read request for the file is received from the network device” (Paragraph 48).

Regarding claim 8, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a logical location of the source data file in the source file volume (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches “**wherein the data processing request is received from the host via a network**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21).

Regarding claim 9, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a physical location of the source data file on the source storage system (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches “**wherein the pointer identifies a physical location of the source data file on the source storage system**” as “A stub file may contain some basic information to identify the file itself and also include

information indicating the location of the data on the secondary storage device”
(Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21).

Regarding claim 10, **Prahlad** further teaches a method comprising:

A) replacing the stub file with the copied data file (Paragraph 35).

The examiner notes that **Prahlad** teaches “**replacing the stub file with the copied data file**” as “De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location” (Paragraph 35). The examiner further notes that it is common knowledge that de-migration results in transferred files being restored to primary systems and replacing the stub files that pointed to their temporary storage location.

Regarding claim 19, **Prahlad** teaches a method comprising:

A) receiving from a host a data processing request specifying a data file (Prahlad, Paragraphs 17 and 48-49, Figure 3);

B) examining a stub file stored on the target storage device that corresponds to the specified data file (Prahlad, Paragraphs 20-21, and 49, Figure 4);

C) wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file (Prahlad, Paragraphs 14, 20-21, and 49, Figure 4);

D) retrieving requested data from the source data file (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4); and

E) providing the requested data to the host (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4).

The examiner notes that **Prahlad** teaches “**receiving from a host a data processing request specifying a data file**” as “In some embodiments, when the NAS device receives an electronic data request from a network device” (Paragraph 17) and “to which the network device can be redirected if a read request for the file is received from the network device” (Paragraph 48). The examiner further notes that **Prahlad** teaches “**examining a stub file stored on the target storage device that corresponds to the specified data file**” as “opening the stub file stored in place of the data by the NAS device at a first location, the first location...reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49). The examiner further notes that **Prahlad** teaches “**wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49). The examiner further notes that **Prahlad** teaches “**retrieving requested data from the source data file**” as “De-migration as used herein generally refers to data retrieval-type

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operations and may...is otherwise restored to the first location" (Paragraph 35) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49). The examiner further notes that **Prahlad** teaches "**providing the requested data to the host**" as "De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location" (Paragraph 35) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49).

Regarding claim 20, **Prahlad** further teaches a method comprising:

A) wherein the source data file is stored in a file volume on the source storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches "**wherein the source data file is stored in a file volume on the source storage device**" as "storing the data to a second location" (Paragraph 20) and "the pointer pointing to the second location; and reading the data from the second location" (Paragraph 21).

Regarding claim 21, **Prahlad** further teaches a method comprising:

A) wherein the stub file is stored in a file volume on the target storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the stub file is stored in a file volume on the target storage device**” as “storing a stub file at the first location” (Paragraph 20) and “opening the stub file in place...to a second location by the network attached storage system” (Paragraph 21).

Regarding claim 22, **Prahlad** further teaches a method comprising:

A) wherein the target storage device comprises a NAS filer (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a NAS filer**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 23, **Prahlad** further teaches a method comprising:

A) wherein the target storage device comprises a file server (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a file server**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for

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electronic data in a computer network on a network attached storage device (NAS)" (Paragraph 17).

Regarding claim 24, **Prahlad** further teaches a method comprising:

A) wherein the data processing request is received from the host via a network (Prahlad, Paragraphs 17 and 48, Figure 3).

The examiner notes that **Prahlad** teaches "**wherein the data processing request is received from the host via a network**" as "In some embodiments, when the NAS device receives an electronic data request from a network device" (Paragraph 17) and "to which the network device can be redirected if a read request for the file is received from the network device" (Paragraph 48).

Regarding claim 25, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a logical location of the source data file in the source file volume (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches "**wherein the data processing request is received from the host via a network**" as "A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21).

Regarding claim 26, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a physical location of the source data file on the source storage system (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches “**wherein the pointer identifies a physical location of the source data file on the source storage system**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21).

Regarding claim 27, **Prahlad** teaches a method comprising:

- A) accessing a target file stored on the target storage device (Prahlad, Paragraphs 17 and 48-49, Figure 3);
- B) wherein the target file is a stub file that contains a pointer identifying a source data file stored on the source storage device (Prahlad, Paragraphs 14, 20-21, and 49, Figure 4); and
- C) copying the identified source data file to the target storage device (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4).

The examiner notes that **Prahlad** teaches “**accessing a target file stored on the target storage device**” as “In some embodiments, when the NAS device receives an electronic data request from a network device” (Paragraph 17) and “to which the network device can be redirected if a read request for the file is received from the network device” (Paragraph 48). The examiner further notes that **Prahlad** teaches “**wherein the target file is a stub file that contains a pointer identifying a source**

data file stored on the source storage device” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49). The examiner further notes that **Prahlad teaches “copying the identified source data file to the target storage device”** as “De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location” (Paragraph 35) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49).

Regarding claim 28, **Prahlad** further teaches a method comprising:

A) wherein the source data file is stored in a file volume on the source storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the source data file is stored in a file volume on the source storage device**” as “storing the data to a second location” (Paragraph 20) and “the pointer pointing to the second location; and reading the data from the second location” (Paragraph 21).

Regarding claim 29, **Prahlad** further teaches a method comprising:

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A) wherein the stub file is stored in a file volume on the target storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the stub file is stored in a file volume on the target storage device**” as “storing a stub file at the first location” (Paragraph 20) and “opening the stub file in place... to a second location by the network attached storage system” (Paragraph 21).

Regarding claim 30, **Prahlad** further teaches a method comprising:

A) wherein the target storage device comprises a NAS filer (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a NAS filer**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 31, **Prahlad** further teaches a method comprising:

A) wherein the target storage device comprises a file server (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a file server**” as “A NAS device may include a specialize file server or

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network attached storage system" (Paragraph 12) and "The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)" (Paragraph 17).

Regarding claim 32, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a logical location of the source data file in the source file volume (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches "**wherein the data processing request is received from the host via a network**" as "A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21).

Regarding claim 33, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a physical location of the source data file on the source storage system (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches "**wherein the pointer identifies a physical location of the source data file on the source storage system**" as "A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21).

Regarding claim 34, **Prahlad** teaches a system comprising:

- A) an interface for receiving from a host a data processing request specifying a data file (Prahlad, Paragraphs 17 and 48-49, Figure 3); and
- B) a processor for examining a stub file stored on the target storage device that corresponds to the specified data file (Prahlad, Paragraphs 20-21, and 49, Figure 4);
- C) wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file (Prahlad, Paragraphs 14, 20-21, and 49, Figure 4); and
- D) for copying the source data file from the source storage device to the target storage device (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4).

The examiner notes that **Prahlad** teaches “**an interface for receiving from a host a data processing request specifying a data file**” as “In some embodiments, when the NAS device receives an electronic data request from a network device” (Paragraph 17) and “to which the network device can be redirected if a read request for the file is received from the network device” (Paragraph 48). The examiner further notes that **Prahlad** teaches “**a processor for examining a stub file stored on the target storage device that corresponds to the specified data file**” as “opening the stub file stored in place of the data by the NAS device at a first location, the first location...reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49).

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The examiner further notes that **Prahlad** teaches “**wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49). The examiner further notes that **Prahlad** teaches “**for copying the source data file from the source storage device to the target storage device**” as “De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location” (Paragraph 35) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49).

Regarding claim 35, **Prahlad** further teaches a system comprising:

- A) wherein the processor additionally retrieves requested data from the copied data file (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4); and
- B) provides the requested data to the host (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4).

The examiner notes that **Prahlad** teaches “**wherein the processor additionally retrieves requested data from the copied data file**” as “De-migration as used herein

generally refers to data retrieval-type operations and may...is otherwise restored to the first location" (Paragraph 35) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49). The examiner further notes that **Prahlad** teaches "**provides the requested data to the host**" as "De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location" (Paragraph 35) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49).

Regarding claim 36, **Prahlad** further teaches a system comprising:

A) wherein the source data file is stored in a file volume on the source storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches "**wherein the source data file is stored in a file volume on the source storage device**" as "storing the data to a second location" (Paragraph 20) and "the pointer pointing to the second location; and reading the data from the second location". (Paragraph 21).

Regarding claim 37, **Prahlad** further teaches a system comprising:

A) wherein the stub file is stored in a file volume on the target storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the stub file is stored in a file volume on the target storage device**” as “storing a stub file at the first location” (Paragraph 20) and “opening the stub file in place...to a second location by the network attached storage system” (Paragraph 21).

Regarding claim 38, **Prahlad** further teaches a system comprising:

A) wherein the target storage device comprises a NAS filer (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a NAS filer**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 39, **Prahlad** further teaches a system comprising:

A) wherein the target storage device comprises a file server (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a file server**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for

electronic data in a computer network on a network attached storage device (NAS)" (Paragraph 17).

Regarding claim 40, **Prahlad** further teaches a system comprising:

A) wherein the data processing request is received from the host via a network (Prahlad, Paragraphs 17 and 48, Figure 3).

The examiner notes that **Prahlad** teaches "**wherein the data processing request is received from the host via a network**" as "In some embodiments, when the NAS device receives an electronic data request from a network device" (Paragraph 17) and "to which the network device can be redirected if a read request for the file is received from the network device" (Paragraph 48).

Regarding claim 41, **Prahlad** further teaches a system comprising:

A) wherein the pointer identifies a logical location of the source data file in the source file volume (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches "**wherein the data processing request is received from the host via a network**" as "A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21).

Regarding claim 42, **Prahlad** further teaches a system comprising:

A) wherein the pointer identifies a physical location of the source data file on the source storage system (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches “**wherein the pointer identifies a physical location of the source data file on the source storage system**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21).

Regarding claim 43, **Prahlad** further teaches a system comprising:

A) replacing the stub file with the copied data file (Paragraph 35).

The examiner notes that **Prahlad** teaches “**replacing the stub file with the copied data file**” as “De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location” (Paragraph 35). The examiner further notes that it is common knowledge that de-migration results in transferred files being restored to primary systems and replacing the stub files that pointed to their temporary storage location.

Regarding claim 52, **Prahlad** teaches a system comprising:

A) an interface for receiving from a host a data processing request specifying a data file (Prahlad, Paragraphs 17 and 48-49, Figure 3); and

B) a processor for examining a stub file stored on the target storage device that corresponds to the specified data file (Prahlad, Paragraphs 20-21, and 49, Figure 4);

- C) wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file (Prahlad, Paragraphs 14, 20-21, and 49, Figure 4);
- D) for retrieving requested data from the source data file (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4); and
- E) for providing the requested data to the host (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4).

The examiner notes that **Prahlad** teaches “**an interface for receiving from a host a data processing request specifying a data file**” as “In some embodiments, when the NAS device receives an electronic data request from a network device” (Paragraph 17) and “to which the network device can be redirected if a read request for the file is received from the network device” (Paragraph 48). The examiner further notes that **Prahlad** teaches “**a processor for examining a stub file stored on the target storage device that corresponds to the specified data file**” as “opening the stub file stored in place of the data by the NAS device at a first location, the first location...reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49). The examiner further notes that **Prahlad** teaches “**wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of

the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49). The examiner further notes that **Prahlad** teaches "**for retrieving requested data from the source data file**" as "De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location" (Paragraph 35) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49). The examiner further notes that **Prahlad** teaches "**for providing the requested data to the host**" as "De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location" (Paragraph 35) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49).

Regarding claim 53, **Prahlad** further teaches a system comprising:

A) wherein the source data file is stored in a file volume on the source storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches "**wherein the source data file is stored in a file volume on the source storage device**" as "storing the data to a second location" (Paragraph 20) and "the pointer pointing to the second location; and reading the data from the second location" (Paragraph 21).

Regarding claim 54, **Prahlad** further teaches a system comprising:

A) wherein the stub file is stored in a file volume on the target storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the stub file is stored in a file volume on the target storage device**” as “storing a stub file at the first location” (Paragraph 20) and “opening the stub file in place...to a second location by the network attached storage system” (Paragraph 21).

Regarding claim 55, **Prahlad** further teaches a system comprising:

A) wherein the target storage device comprises a NAS filer (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a NAS filer**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 56, **Prahlad** further teaches a system comprising:

A) wherein the target storage device comprises a file server (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a file server**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 57, **Prahlad** further teaches a system comprising:

A) wherein the data processing request is received from the host via a network (Prahlad, Paragraphs 17 and 48, Figure 3).

The examiner notes that **Prahlad** teaches “**wherein the data processing request is received from the host via a network**” as “In some embodiments, when the NAS device receives an electronic data request from a network device” (Paragraph 17) and “to which the network device can be redirected if a read request for the file is received from the network device” (Paragraph 48).

Regarding claim 58, **Prahlad** further teaches a system comprising:

A) wherein the pointer identifies a logical location of the source data file in the source file volume (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches “**wherein the data processing request is received from the host via a network**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the

location of the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21).

Regarding claim 59, **Prahlad** further teaches a system comprising:

A) wherein the pointer identifies a physical location of the source data file on the source storage system (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches "**wherein the pointer identifies a physical location of the source data file on the source storage system**" as "A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21).

Regarding claim 60, **Prahlad** teaches a method comprising:

A) a processor for accessing a target file stored on the target storage device (Prahlad, Paragraphs 17 and 48-49, Figure 3);

B) wherein the target file is a stub file that contains a pointer identifying a source data file stored on the source storage device (Prahlad, 14, Paragraphs 20-21, and 49, Figure 4); and

C) for copying the identified source data file to the target storage device (Prahlad, Paragraphs 20-21, 35, and 49, Figure 4).

The examiner notes that **Prahlad** teaches "**a processor for accessing a target file stored on the target storage device**" as "In some embodiments, when the NAS

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device receives an electronic data request from a network device" (Paragraph 17) and "to which the network device can be redirected if a read request for the file is received from the network device" (Paragraph 48). The examiner further notes that **Prahlad** teaches "**wherein the target file is a stub file that contains a pointer identifying a source data file stored on the source storage device**" as "A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49). The examiner further notes that **Prahlad** teaches "**for copying the identified source data file to the target storage device**" as "De-migration as used herein generally refers to data retrieval-type operations and may...is otherwise restored to the first location" (Paragraph 35) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49).

Regarding claim 61, **Prahlad** further teaches a method comprising:

A) wherein the source data file is stored in a file volume on the source storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches "**wherein the source data file is stored in a file volume on the source storage device**" as "storing the data to a

second location” (Paragraph 20) and “the pointer pointing to the second location; and reading the data from the second location” (Paragraph 21).

Regarding claim 62, **Prahlad** further teaches a method comprising:

A) wherein the stub file is stored in a file volume on the target storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the stub file is stored in a file volume on the target storage device**” as “storing a stub file at the first location” (Paragraph 20) and “opening the stub file in place...to a second location by the network attached storage system” (Paragraph 21).

Regarding claim 63, **Prahlad** further teaches a method comprising:

A) wherein the target storage device comprises a NAS filer (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a NAS filer**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 64, **Prahlad** further teaches a method comprising:

A) wherein the target storage device comprises a file server (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a file server**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 65, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a logical location of the source data file in the source file volume (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches “**wherein the data processing request is received from the host via a network**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21).

Regarding claim 66, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a physical location of the source data file on the source storage system (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches “wherein the pointer identifies a physical location of the source data file on the source storage system” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11-18 and 44-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Prahlad et al.** (U.S. PGPUB 2006/0010154) as applied to claims 1-10, 19-43, and 52-66 and in view of **Cabrera et al.** (U.S. Patent 6,981,005).

7. Regarding claim 11, **Prahlad** teaches a method comprising:

A) receiving from a host a data processing request specifying a data file (**Prahlad**, Paragraphs 17 and 48-49, Figure 3);

B) examining a stub file stored on the target storage device that corresponds to the specified data file (**Prahlad**, Paragraphs 20-21, and 49, Figure 4);

- C) wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file (Prahlad, Paragraphs 14, 20-21, and 49, Figure 4);
- D) determining a size of the source data file (Prahlad, Paragraphs 32 and 37)

The examiner notes that **Prahlad** teaches “**receiving from a host a data processing request specifying a data file**” as “In some embodiments, when the NAS device receives an electronic data request from a network device” (Paragraph 17) and “to which the network device can be redirected if a read request for the file is received from the network device” (Paragraph 48). The examiner further notes that **Prahlad** teaches “**examining a stub file stored on the target storage device that corresponds to the specified data file**” as “opening the stub file stored in place of the data by the NAS device at a first location, the first location...reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49). The examiner further notes that **Prahlad** teaches “**wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49).

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The examiner further notes that **Prahlad** teaches “**determining a size of the source data file**” as “Data migratory 95 may be responsible for storing electronic data...based on a set of criteria specified by a system user (e.g., storage policy, file size, age, type, etc.)” (Paragraph 32).

Prahlad does not explicitly teach:

E) copying the source data file from the source storage device to the target storage device, if the size of the source data file does not exceed a predetermined limit.

Cabrera, however, teaches “**copying the source data file from the source storage device to the target storage device, if the size of the source data file does not exceed a predetermined limit**” as “The present invention also includes the ability to provide on-disk file memory allocation limits to limit the size of a file/stream. The present invention supports migration for such a constraint...the present invention is a mechanism for enforcing the storage allocation limit” (Column 10, lines 30-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Cabrera’s** would have allowed **Prahlad’s** to provide a method for preventing lingering inefficiency associated systems that are not equipped to handle different types of storage and data transfer operations with maximum efficiency, as noted by **Cabrera** (Column 2, lines 22-35

Regarding claim 12, **Prahlad** further teaches a method comprising:

A) wherein the source data file is stored in a file volume on the source storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the source data file is stored in a file volume on the source storage device**” as “storing the data to a second location” (Paragraph 20) and “the pointer pointing to the second location; and reading the data from the second location” (Paragraph 21).

Regarding claim 13, **Prahlad** further teaches a method comprising:

A) wherein the stub file is stored in a file volume on the target storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the stub file is stored in a file volume on the target storage device**” as “storing a stub file at the first location” (Paragraph 20) and “opening the stub file in place...to a second location by the network attached storage system” (Paragraph 21).

Regarding claim 14, **Prahlad** further teaches a method comprising:

A) wherein the target storage device comprises a NAS filer (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a NAS filer**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for

electronic data in a computer network on a network attached storage device (NAS)" (Paragraph 17).

Regarding claim 15, **Prahlad** further teaches a method comprising:

A) wherein the target storage device comprises a file server (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches "**wherein the target storage device comprises a file server**" as "A NAS device may include a specialize file server or network attached storage system" (Paragraph 12) and "The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)" (Paragraph 17).

Regarding claim 16, **Prahlad** further teaches a method comprising:

A) wherein the data processing request is received from the host via a network (Prahlad, Paragraphs 17 and 48, Figure 3).

The examiner notes that **Prahlad** teaches "**wherein the data processing request is received from the host via a network**" as "In some embodiments, when the NAS device receives an electronic data request from a network device" (Paragraph 17) and "to which the network device can be redirected if a read request for the file is received from the network device" (Paragraph 48).

Regarding claim 17, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a logical location of the source data file in the source file volume (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches “**wherein the pointer identifies a logical location of the source data file in the source file volume**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21).

Regarding claim 18, **Prahlad** further teaches a method comprising:

A) wherein the pointer identifies a physical location of the source data file on the source storage system (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches “**wherein the pointer identifies a physical location of the source data file on the source storage system**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device” (Paragraph 14), “reading a pointer stored in the stub file” (Paragraph 21).

Regarding claim 44, **Prahlad** teaches a system comprising:

A) an interface for receiving from a host a data processing request specifying a data file (Prahlad, Paragraphs 17 and 48-49, Figure 3);

- B) a processor for examining a stub file stored on the target storage device that corresponds to the specified data file (Prahlad, Paragraphs 20-21, and 49, Figure 4);
- C) wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file (Prahlad, Paragraphs 14, 20-21, and 49, Figure 4);
- D) wherein the processor determines a size of the source data file (Paragraphs 32 and 37)

The examiner notes that **Prahlad** teaches “**an interface for receiving from a host a data processing request specifying a data file**” as “In some embodiments, when the NAS device receives an electronic data request from a network device” (Paragraph 17) and “to which the network device can be redirected if a read request for the file is received from the network device” (Paragraph 48). The examiner further notes that **Prahlad** teaches “**a processor for examining a stub file stored on the target storage device that corresponds to the specified data file**” as “opening the stub file stored in place of the data by the NAS device at a first location, the first location...reading a pointer stored in the stub file” (Paragraph 21) and “read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file” (Paragraph 49). The examiner further notes that **Prahlad** teaches “**wherein the stub file contains a pointer identifying a source data file stored on the source storage device that corresponds to the specified data file**” as “A stub file may contain some basic information to identify the file itself and also include information indicating the location of

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the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21) and "read the stub file at step 402 and recognize that the data is now a stub file, and be automatically redirected to read the data from the location pointed to by the stub file" (Paragraph 49). The examiner further notes that **Prahlad** teaches "**wherein the processor determines a size of the source data file**" as "Data migratory 95 may be responsible for storing electronic data...based on a set of criteria specified by a system user (e.g., storage policy, file size, age, type, etc.)" (Paragraph 32).

Prahlad does not explicitly teach:

E) copies the source data file from the source storage device to the target storage device, if the size of the source data file does not exceed a predetermined limit.

Cabrera, however, teaches "**copies the source data file from the source storage device to the target storage device, if the size of the source data file does not exceed a predetermined limit**" as "The present invention also includes the ability to provide on-disk file memory allocation limits to limit the size of a file/stream. The present invention supports migration for such a constraint...the present invention is a mechanism for enforcing the storage allocation limit" (Column 10, lines 30-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references because teaching **Cabrera's** would have allowed **Prahlad's** to provide a method for preventing lingering inefficiency associated systems that are not equipped to handle different types of

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storage and data transfer operations with maximum efficiency, as noted by **Cabrera**
(Column 2, lines 22-35)

Regarding claim 45, **Prahlad** further teaches a system comprising:

A) wherein the source data file is stored in a file volume on the source storage device
(Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the source data file is stored in a file volume on the source storage device**” as “storing the data to a second location” (Paragraph 20) and “the pointer pointing to the second location; and reading the data from the second location” (Paragraph 21).

Regarding claim 46, **Prahlad** further teaches a system comprising:

A) wherein the stub file is stored in a file volume on the target storage device (Prahlad, Paragraphs 20-21).

The examiner notes that **Prahlad** teaches “**wherein the stub file is stored in a file volume on the target storage device**” as “storing a stub file at the first location” (Paragraph 20) and “opening the stub file in place...to a second location by the network attached storage system” (Paragraph 21).

Regarding claim 47, **Prahlad** further teaches a system comprising:

A) wherein the target storage device comprises a NAS filer (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a NAS filer**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 48, **Prahlad** further teaches a system comprising:

A) wherein the target storage device comprises a file server (Prahlad, Paragraphs 12 and 19, Figure 2).

The examiner notes that **Prahlad** teaches “**wherein the target storage device comprises a file server**” as “A NAS device may include a specialize file server or network attached storage system” (Paragraph 12) and “The present invention provides, among other things, systems and methods for performing storage operations for electronic data in a computer network on a network attached storage device (NAS)” (Paragraph 17).

Regarding claim 49, **Prahlad** further teaches a system comprising:

A) wherein the data processing request is received from the host via a network (Prahlad, Paragraphs 17 and 48, Figure 3).

The examiner notes that **Prahlad** teaches “**wherein the data processing request is received from the host via a network**” as “In some embodiments, when

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the NAS device receives an electronic data request from a network device" (Paragraph 17) and "to which the network device can be redirected if a read request for the file is received from the network device" (Paragraph 48).

Regarding claim 50, **Prahlad** further teaches a system comprising:

A) wherein the pointer identifies a logical location of the source data file in the source file volume (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches "**wherein the pointer identifies a logical location of the source data file in the source file volume**" as "A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21).

Regarding claim 51, **Prahlad** further teaches a system comprising:

A) wherein the pointer identifies a physical location of the source data file on the source storage system (Prahlad, Paragraphs 14 and 21).

The examiner notes that **Prahlad** teaches "**wherein the pointer identifies a physical location of the source data file on the source storage system**" as "A stub file may contain some basic information to identify the file itself and also include information indicating the location of the data on the secondary storage device" (Paragraph 14), "reading a pointer stored in the stub file" (Paragraph 21).

Conclusion

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8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Article entitled "Data Migration Solution" by **Falconstor** on 23 January 2003.

The subject matter disclosed therein is pertinent to that of claims 1-66 (e.g., methods for data migration using stub files with NAS devices).

U.S. Patent 5,564,037 issued to **Lam** on 08 October 1996. The subject matter disclosed therein is pertinent to that of claims 1-66 (e.g., methods for data migration using stub files with NAS devices).

U.S. Patent 5,991,753 issued to **Wilde** on 23 November 1999. The subject matter disclosed therein is pertinent to that of claims 1-66 (e.g., methods for data migration using stub files with NAS devices).

U.S. PGPUB 2005/0015409 issued to **Cheng et al.** on 20 January 2005. The subject matter disclosed therein is pertinent to that of claims 1-66 (e.g., methods for data migration using stub files with NAS devices).

U.S. Patent 7,103,740 issued to **Colgrove et al.** on 05 September 2006. The subject matter disclosed therein is pertinent to that of claims 1-66 (e.g., methods for data migration using stub files with NAS devices).

U.S. PGPUB 2005/0033800 issued to **Kavuri et al.** on 10 February 2005. The subject matter disclosed therein is pertinent to that of claims 1-66 (e.g., methods for data migration using stub files with NAS devices).

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mahesh Dwivedi whose telephone number is (571) 272-2731. The examiner can normally be reached on Monday to Friday 8:20 am – 4:40 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached (571) 272-3642. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mahesh Dwivedi

Patent Examiner

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September 13, 2006



Leslie Wong